Value Creation at Fuji Electric

Ever since our establishment in 1923, Fuji Electric has been an innovator of electric and thermal energy technologies. By capitalizing on the technology with which we can wield control—i.e., creating, measuring (sensing technologies), controlling (control technologies), converting (power electronics technologies), and optimizing electricity—we contribute to clean energy, stable supply of energy, automation, and energy saving. Going forward, we will continue to address the energy and environmental issues of our customers by leveraging the technological and engineering capabilities we have honed thus far together with our extensive track record of deliveries to a broad range of customers.

Clean energy

Muara Laboh Geothermal Power Plant in Indonesia
Power generation capacity equivalent to the power usage of 420,000 households on the Indonesian island of Sumatra
(Source: Sumitomo Corporation website)

CO_2 reductions (FY2019)*1

Geothermal power generation	Hydro power generation	Fuel cells
Approx. **5,000** thousand t-CO_2	Approx. **1,000** thousand t-CO_2	Approx. **50** thousand t-CO_2

Boasting the leading global share*2 in geothermal power generation, an extensive domestic delivery track record in hydro power generation and solar power generation systems, and the first-ever commercialized fuel cells for industrial application, we deliver a whole host of clean energy sources and contribute to the local production and local consumption of energy from distributed power sources. We also have the equipment and systems capable of achieving optimum operation of renewable energy, and we contribute to the effective utilization of energy by harnessing the power supply/demand prediction technology and know-how cultivated through numerous demonstration projects.

Key delivery track record	• Geothermal power generation: 85 units (approx. 3.2 GW) • Hydro power generation: 444 units (approx. 5.2 GW) • Fuel cells: 99 units
Key demonstration projects	• Microgrid system for isolated islands (six islands in Kagoshima Prefecture; three islands in Okinawa Prefecture) • Industrial parks (India, Indonesia) • Kitakyushu, Fukuoka Prefecture • Soma IHI Green Energy Center (Soma, Fukushima Prefecture)

Stable energy supply

All-inclusive provision of highly reliable and highly efficient electric equipment for data centers, from system design through to installation and maintenance services

Large-capacity UPS.
Highly efficient and compact.

Substation equipment

Environmentally friendly C-GIS (Gas-insulated switchgear)

We contribute to the stable supply of energy for customers in various industries mainly with uninterruptible power systems (UPSs) for data centers, large-capacity rectifier transformers (top global share) for non-ferrous metals, and substation equipment for steel, chemicals, electrical machinery, precision equipment, and railway industries. We also contribute to the prevention of global warming by providing environmentally friendly cubicle-type gas-insulated switchgear (C-GIS) products that help reduce greenhouse gas (GHG) emissions without the use of SF_6 gas.

Key delivery track record	• Substation equipment: Transformers: 2,450 units or more; Switchgear: 11,000 units or more • Large-capacity rectifier transformers: Approx. 27.5 GW

Automation

We delivered an assembly process data collection system to the variable compression ratio engine (VC-Turbo) production line of Nissan Motor Co., Ltd. Data from each process is collected automatically.

The OnePackEdge assembly process data collection system contributes to productivity improvements through cause analysis for problems with their production equipment and generation of defects.

This system is capable of achieving a production line that never stops through cause analysis for problems with their production equipment and generation of defects. We help customers make quality and productivity improvements in automated production lines by providing a single package for collecting and analyzing various data, such as temperature, pressure, vibration, operation, and quality information.

Two-way case

Showcase side

Vending machine side

Convenience stores are currently struggling to secure enough manpower. We contribute to labor saving by offering two-way cases that function as a showcase when the store is open and as a vending machine after hours, as well as automatic change dispensers for self-checkout registers.

Energy saving

We delivered main power converters equipped with a next-generation power semiconductor (SiC) for Central Japan Railway Company's latest high-speed rail model, thus lightening the weight of the railcars.

Compared with Si, SiC power semiconductor modules contribute to a 30% reduction in CO_2 emissions caused by power loss.

CO_2 reductions (FY2019)*1

Power semiconductors
Approx. **5,000** thousand t-CO_2

We delivered a set of around 700 inverters to Singapore's Outram Community Hospital. The inverters control the fans and pumps used for air conditioning and ventilation to optimize airflow and water consumption, saving energies.

The FRENIC-HVAC low-voltage inverter is the first in the industry to be accredited as environmentally friendly by a third-party organization (UL/EPD).

CO_2 reductions (FY2019)*1

Low-voltage inverters
Approx. **1,800** thousand t-CO_2

Power semiconductors efficiently control electricity. They are mounted inside power electronics systems, such as inverters that control motor rotation, thereby contributing to energy saving in industrial equipment and factories. In the power semiconductors industry, Fuji Electric ranks third in terms of the global share of IGBT modules for industrial applications and commands the top share of inverters in Japan.

*1 CO_2 reductions (FY2019) are based on 12 months of operation for products delivered between FY2009 and FY2019 *2 Since 2000